

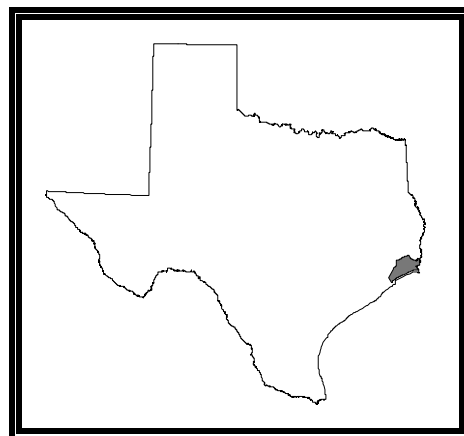
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Basin 07

Neches–Trinity Coastal



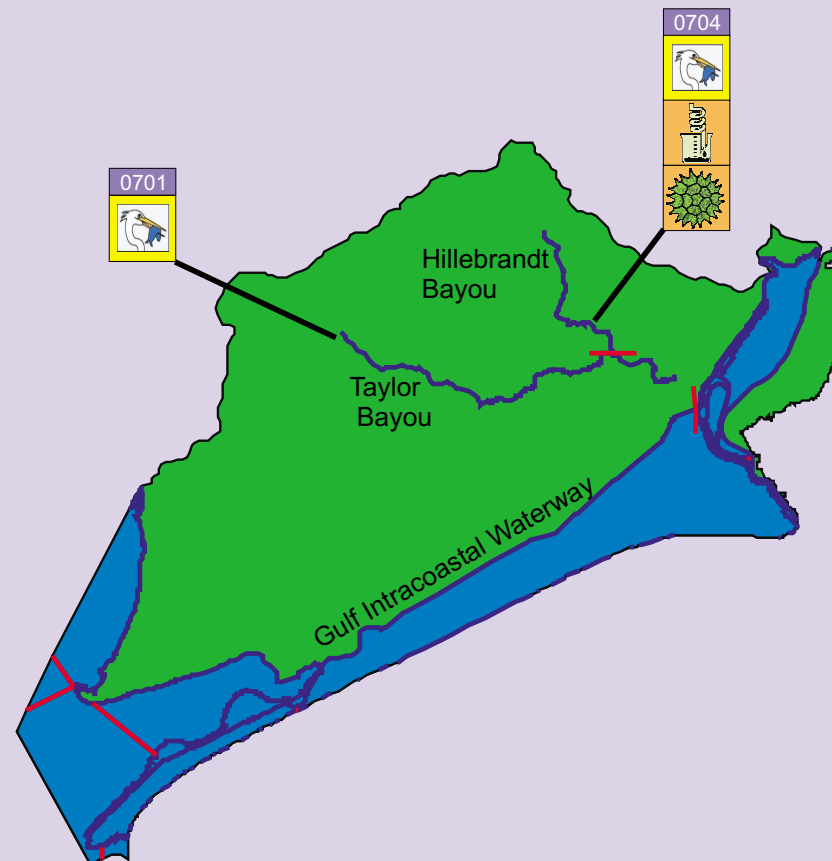
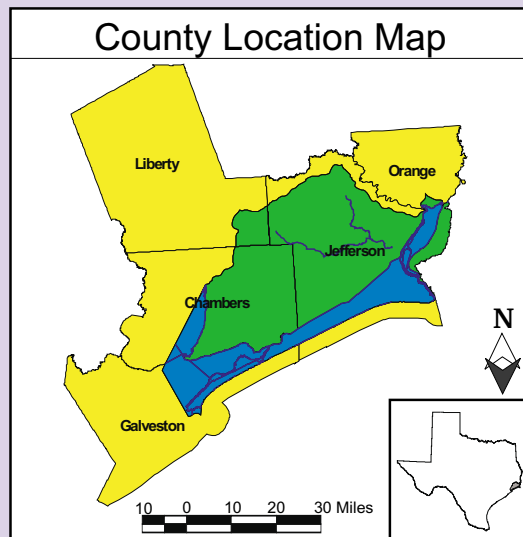
Neches–Trinity Coastal Basin Narrative Summary

The coastal plain between the Neches River and Trinity River forms the Neches–Trinity Coastal Basin. The area is located in Jefferson and Chambers Counties. Maximum elevation in the basin is approximately 50 feet, although most of the basin is less than 25 feet in elevation. Total basin drainage area is 769 square miles. The basin has been divided into four segments consisting of 132 miles. Nine surface water monitoring sites are intensively monitored throughout the basin.

Presently 95 percent of the basin population resides in Jefferson County. The economy of the area is based on chemical, petrochemical manufacturing, oil production, agriculture, and shipping.

Depressed dissolved oxygen concentrations occur in Taylor Bayou and Hillebrandt Bayou. Taylor Bayou is a naturally sensitive body of water due to hydrological modifications by channelization and a saltwater barrier, extremely sluggish flow conditions, and low atmospheric reaeration capabilities. These conditions are further aggravated by point source discharges from the cities of Beaumont and Port Arthur. Elevated ammonia nitrogen concentrations occur in Hillebrandt Bayou. Toxic substances in sediment exceed screening levels in Alligator Bayou.

Neches-Trinity Coastal Basin Identified Water Quality Issues



Neches–Trinity Coastal Basin Graphical Summary

Basin Map	Water Bodies									
	Segment 0701 Taylor Bayou Above Tidal	Segment 0702 Intracoastal Waterway Tidal	Segment 0702A Alligator Bayou	Segment 0703 Sabine-Neches Canal Tidal	Segment 0704 Hillebrandt Bayou					
DESIGNATED USE SUPPORT										
Contact Recreation	S	S	S	S	S					
Noncontact Recreation	X	X	X	X	X					
Public Water Supply	X	X	X	X	X					
Fish Consumption										
Human Health	NA	NA	S	NA	NA					
Advisories/Closures	S	NA	NA	NA	NA					
Aquatic Life										
Dissolved Oxygen (Grab)	P	S	S	S	P					
Dissolved Oxygen (24-Hour)	NA	NA	NA	NA	NA					
Metals in Water	NA	NA	S	NA	NA					
Organics in Water	NA	NA	S	NA	NA					
Water Toxicity Tests	NA	NA	P	NA	NA					
Sediment Toxicity Tests	NA	NA	N	NA	NA					
Macrobenthos	NA	NA	NA	NA	NA					
Fish	NA	NA	NA	NA	NA					
GENERAL USE SUPPORT										
Water Temperature	S	S	X	S	S					
pH	S	S	X	S	S					
Chloride	S	X	X	X	S					
Sulfate	S	X	X	X	S					
Total Dissolved Solids	S	X	X	X	S					

S = Support; P = Partial Support; N = Nonsupport; T = Threatened; NC = No Concern; C = Concern;
NA = Not Assessed; X = Not Applicable

Neches–Trinity Coastal Basin Graphical Summary (Continued)

Basin Map	Water Bodies									
	Segment 0701 Taylor Bayou Above Tidal	Segment 0702 Intracoastal Waterway Tidal	Segment 0702A Alligator Bayou	Segment 0703 Sabine-Neches Canal Tidal	Segment 0704 Hillebrandt Bayou					
WATER QUALITY CONCERNS										
Contact Recreation	X	X	X	X	X					
Noncontact Recreation	X	X	X	X	X					
Fish Tissue	S	NA	NC	NA	NA					
Sediment	NA	NA	C	NA	NA					
Narrative	NC	NC	NC	NC	NC					
Nutrient Enrichment										
Ammonia Nitrogen	NC	NC	NC	NC	C					
Nitrite + Nitrate Nitrogen	NC	NC	NA	NC	NC					
Orthophosphorus	NC	NC	NC	NC	NC					
Total Phosphorus	NC	NC	NC	NC	NC					
Chlorophyll <i>a</i>	NC	NC	C	NC	C					
Public Water Supply										
Finished Water Chloride	X	X	X	X	X					
Finished Water Sulfate	X	X	X	X	X					
Finished Water TDS	X	X	X	X	X					
Surface Water Chloride	X	X	X	X	X					
Surface Water Sulfate	X	X	X	X	X					
Surface Water TDS	X	X	X	X	X					
Aquatic Life										
Dissolved Oxygen	X	X	X	X	X					
Metals in Water	NA	NA	X	NA	NA					
Organics in Water	NA	NA	X	NA	NA					
Water Toxicity Tests	NA	NA	X	NA	NA					
Sediment Toxicity Tests	NA	NA	X	NA	NA					

Neches–Trinity Coastal Basin

Segment 0701 - Taylor Bayou Above Tidal

Water body description: From the saltwater lock 7.7 km (4.8 miles) downstream of SH 73 in Jefferson County to the Lower Neches Valley Authority Canal in Jefferson County.

Water body classification: Classified

Water body type: Freshwater Stream

Water body length / area: 33.00 Miles

Use support summary: The aquatic life use is partially supported in the lower 25 miles due to depressed dissolved oxygen concentrations. The contact recreation, fish consumption, and general uses are supported in the lower 25 miles of the segment.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Additional information: A project is scheduled for dissolved oxygen to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at www.tnrcc.state.tx.us/water/quality/tmdl/.

Monitoring sites used in the assessment

Station	Station Description
10668	Taylor Bayou at SH 73 west of Port Arthur

Published studies

Publication	Date	Author
IMS 16 Taylor Bayou	July 1974	Twidwell, S.

Wastewater dischargers

Permit type	Number of outfalls
Domestic	11
Industrial	6

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Segment 0702 - Intracoastal Waterway Tidal

Water body description: From the confluence with Galveston Bay at Port Bolivar in Galveston County to the confluence with the Sabine-Neches Canal in Jefferson County (including Taylor Bayou Tidal from the confluence with the Intracoastal Waterway up to the saltwater lock 7.7 km (4.8 miles) downstream of SH 73 in Jefferson County)

Water body classification: Classified

Water body type: Tidal Stream

Water body length / area: 63.00 Miles

Use support summary: Available data indicate that the aquatic life, contact recreation, and general uses are supported in a 25 mile reach on the eastern end of the segment. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Additional information: A wasteload evaluation (WLE) for dissolved oxygen was approved in 1998 and has been incorporated into the state Water Quality Management Plan. Advanced waste treatment is required for one or more dischargers.

Monitoring sites used in the assessment

Station	Station Description
10640	Taylor Bayou approx. 1/4 mi. north of intracoastal canal
10679	Intracoastal Waterway Sea Rim State Park special station on GIWW at SH 87

Wastewater dischargers

Permit type	Number of outfalls
Domestic	7
Industrial	24

Historical fish kills

Start date	Location	Fish killed	Suspected cause
10/13/1996	Ten-Mile Cut near Mud Lake in Jefferson County	200	Low Dissolved Oxygen

Neches–Trinity Coastal Basin

Segment 0702A - Alligator Bayou (unclassified water body)

Water body description: From the Alligator Bayou pump station at the Jefferson County hurricane protection levee one mile downstream of Spur 215 in Port Arthur to a point immediately upstream of the confluence with Jefferson County Drainage District No. 7 city outfall canal.

Water body classification: Unclassified

Water body type: Freshwater Stream

Water body length / area: 3.75 Miles

Use support summary: The aquatic life use is not supported due to significant effects in ambient sediment toxicity tests. The aquatic life use is partially supported due to significant effects in ambient water toxicity tests. The contact recreation use is supported. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary: Chlorophyll *a* is a concern. Chromium, copper, lead, mercury, selenium and zinc in sediment are also concerns.

Additional information: Alligator Bayou is effectively isolated from tidal influence by a hurricane barrier.

A project is underway for ambient toxicity in sediment to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at www.tnrcc.state.tx.us/water/quality/tmdl/.

Monitoring sites used in the assessment

Station	Station Description
10643	Alligator Bayou at SH 82

Neches–Trinity Coastal Basin

Segment 0703 - Sabine-Neches Canal Tidal

Water body description: From the confluence with Sabine Pass at the southern tip of Pleasure Island in Jefferson County to the Sabine Lake seawall at the northern tip of Pleasure Island in Jefferson County.

Water body classification: Classified

Water body type: Tidal Stream

Water body length / area: 22.00 Miles

Use support summary: Available data indicate that the aquatic life, contact recreation, and general uses are supported. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Monitoring sites used in the assessment

Station	Station Description
10683	Sabine/Neches Canal adjacent to Topco docks

Published studies

Publication	Date	Author
IS 19 Sabine-Neches Canal	Sept. 1978	Ottmers, D.

Wastewater dischargers

Permit type	Number of outfalls
Domestic	6
Industrial	24

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Segment 0704 - Hillebrandt Bayou

Water body description: From the confluence of Taylor Bayou in Jefferson County to a point 100 meters (110 yards) upstream of SH 124 in Jefferson County.

Water body classification: Classified

Water body type: Freshwater Stream

Water body length / area: 14.00 Miles

Use support summary: The aquatic life use is partially supported due to depressed dissolved oxygen concentrations. Contact recreation and general uses are supported. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary: Ammonia nitrogen and chlorophyll *a* are concerns.

Additional information: A project is scheduled for dissolved oxygen to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at www.tnrcc.state.tx.us/water/quality/tmdl/.

Monitoring sites used in the assessment

Station	Station Description
10685	Hillebrandt Bayou at Hillebrandt Road near Lovell Lake

Wastewater dischargers

Permit type	Number of outfalls
Domestic	3
Industrial	13

